General Specifications

Item	Specification
Lubricants and Chemicals	
SAE 5W-20 Premium Synthetic Blend Motor Oil XO-5W20-QSP	WSS-M2C153-H

Torque Specifications

Description	Nm	lb-in
Throttle body nuts and bolts	9	80
Fuel injection supply manifold bolts	10	89
42-pin engine bulkhead electrical connector bolt	6	53

Fuel Charging And Controls

The fuel injection supply manifold (9F792):

- delivers fuel to the fuel injector.
- receives fuel from the fuel supply line.

The throttle body (9E926):

- controls air supply to the upper intake manifold (9424) by positioning the throttle plate.
- connects the accelerator cable (9A758) and, if equipped, the speed control actuator cable (9A825) to the throttle lever.
- is not adjustable.
- cannot be cleaned.

The fuel injector (9F593):

- is electrically operated by the powertrain control module (PCM) (12A650).
- has an internal solenoid that opens a needle valve to inject fuel into the lower intake manifold.
- atomizes the fuel as the fuel is delivered.
- is deposit-resistant. Do not clean.

The fuel pressure relief valve (9H321):

- is used to inspect and relieve fuel pressure.

Fuel Charging And Controls

Refer to the Powertrain Control/Emissions Diagnosis (PC/ED) manual.

Idle Speed Adjustment

Powertrain Control/Emissions Diagnosis (PC/ED) manual

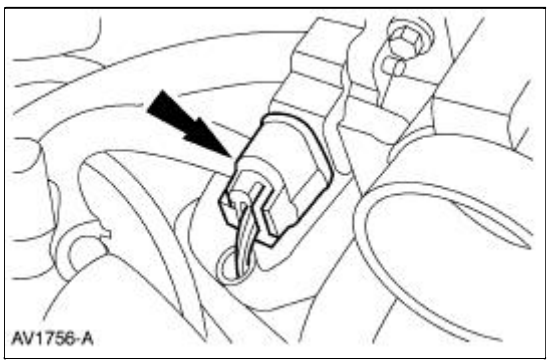
Throttle Body

Removal and Installation

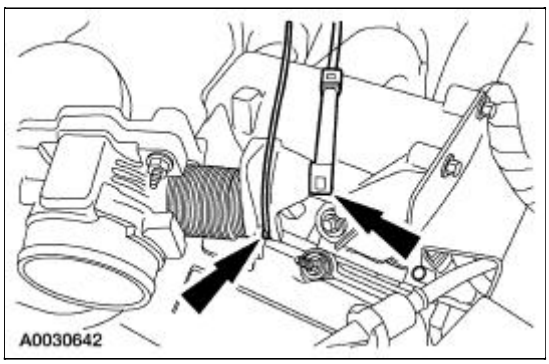
WARNING: Do not smoke or carry lighted tobacco or open flame of any type when working on or near any fuel related components. Highly flammable mixtures are always present and may ignite. Failure to follow these instructions may result in personal injury.

CAUTION: The throttle body bore and plate area have a special coating and cannot be cleaned.

1. Remove the air cleaner outlet tube (9B659). For additional information, refer to Section 303-12 .
2. Disconnect the throttle position (TP) sensor electrical connector.

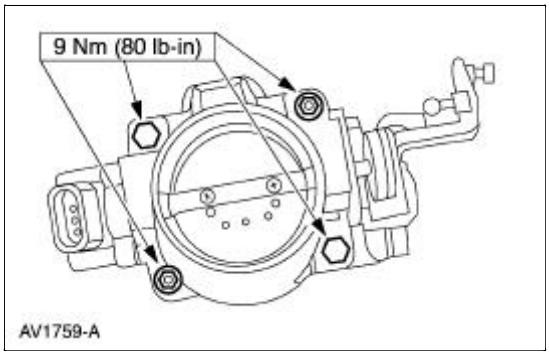


3. Disconnect the accelerator cable (9A758) and (if equipped) the speed control actuator cable (9A825).



4. **NOTE:** Discard the throttle body gasket after removing the throttle body.

   Remove the throttle body.
   - Remove the nuts.
   - Remove the bolts.



5. To install, reverse the removal procedure.

Fuel Injectors

Material

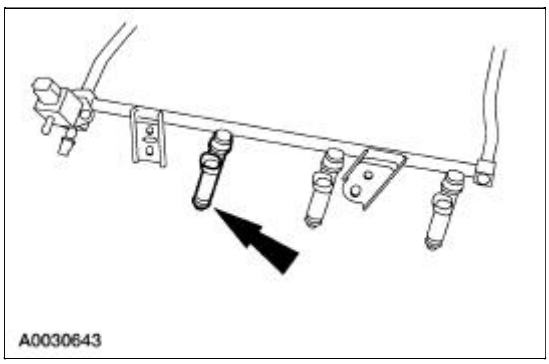
Item	Specification
SAE 5W-20 Premium Synthetic Blend Motor Oil XO-5W20-QSP or equivalent	WSS-M2C153-H

Removal and Installation

WARNING: Do not smoke or carry lighted tobacco or open flame of any type when working on or near any fuel related components. Highly flammable mixtures are always present and may ignite. Failure to follow these instructions may result in personal injury.

WARNING: Fuel in the fuel system remains under high pressure even when the engine is not running. Before working on or disconnecting any of the fuel lines or fuel system components, the fuel pressure must be relieved. Failure to follow these instructions may result in personal injury

1. Remove the supply manifold. For additional information, refer to Supply Manifold in this section.
2. Remove the six fuel injectors from the supply manifold.

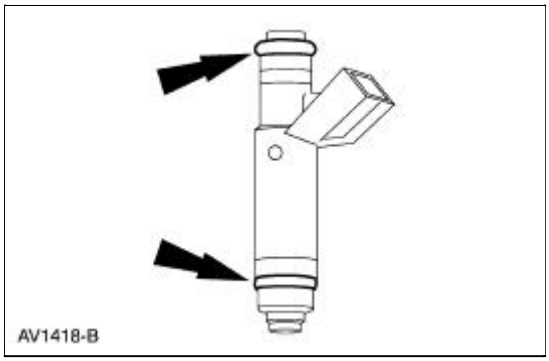


3. **CAUTION: The retaining clip must be in the upper groove on the injector or the injector may become loose.**

   NOTE: Inspect the two O-rings from each fuel injector. Install new O-rings as needed.

   NOTE: Lubricate the new O-rings with clean engine oil to aid installation.

   To install, reverse the removal procedure.

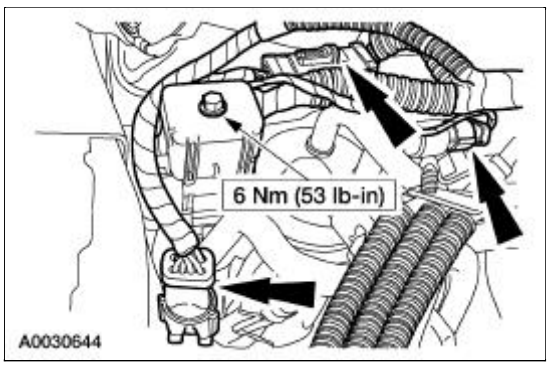

AV1418-B

Fuel Charging Wiring Harness

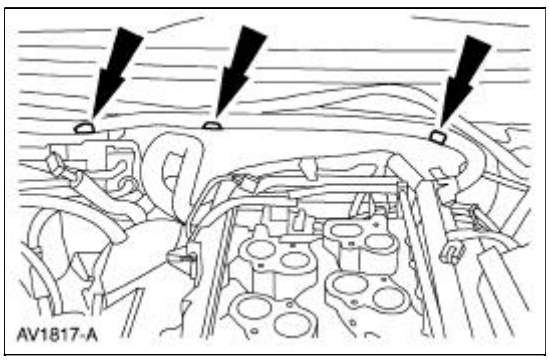
Removal and Installation

WARNING: Do not smoke or carry lighted tobacco or open flame of any type when working on or near any fuel related components. Highly flammable mixtures are always present and may ignite. Failure to follow these instructions may result in personal injury.

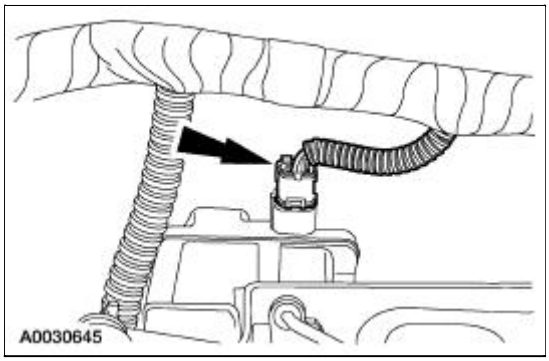
1. Disconnect the battery ground cable. For additional information, refer to Section 414-01 .
2. Remove the upper intake manifold. For additional information, refer to Section 303-01A .
3. Disconnect the following electrical connectors.
   - 42-pin engine bulkhead connector
   - 16-pin connector
   - 8-pin connector
   - A/C pressure switch



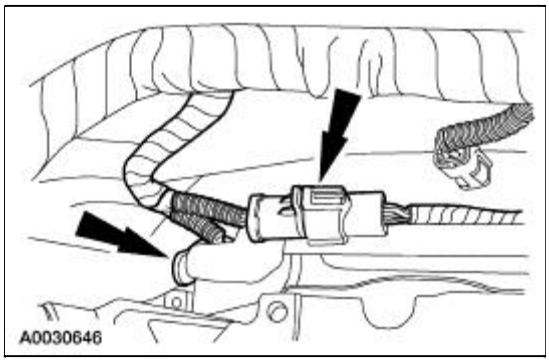
4. Separate the wiring harness from the dash panel.



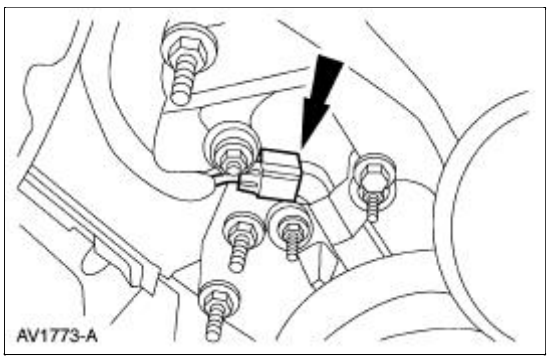
5. Disconnect the intake manifold runner control (IMRC) actuator electrical connector.



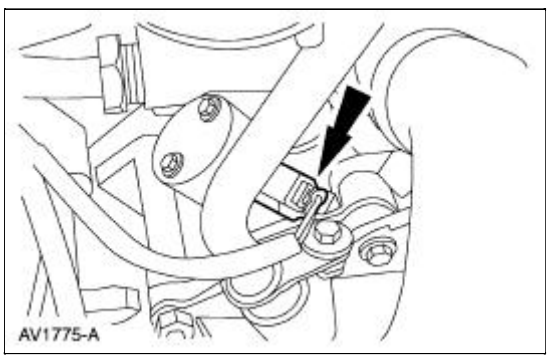
6. Disconnect the RH heated oxygen sensor (HO2S) electrical connector and the 16-pin electrical connector.



7. Disconnect the crankshaft position (CKP) sensor electrical connector.

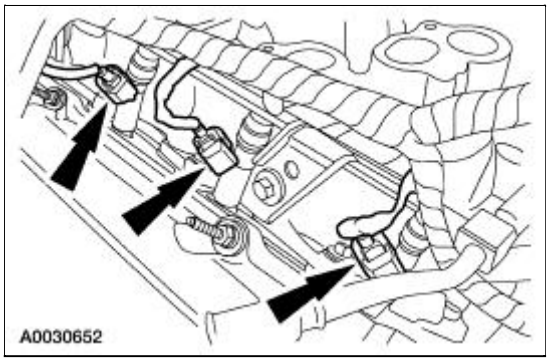


8. Disconnect the camshaft position (CMP) sensor electrical connector.

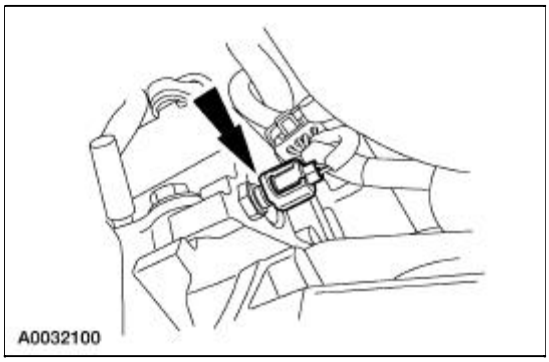


9. **NOTE:** Right side shown, left side similar.

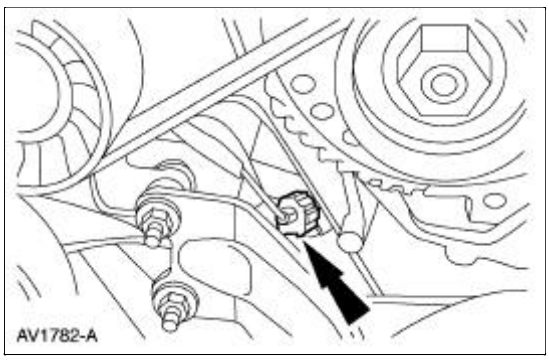
   Disconnect the six fuel injector electrical connectors.



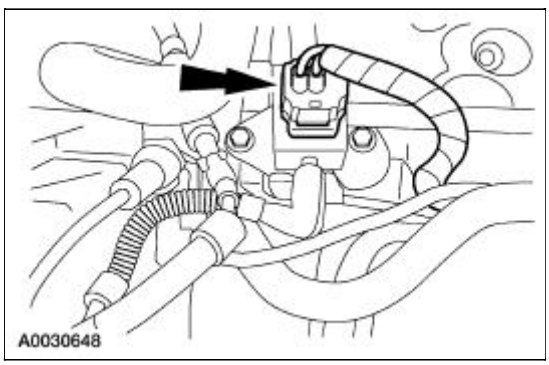
10. Disconnect the cylinder head temperature (CHT) sensor electrical connector on the back of the left cylinder head.



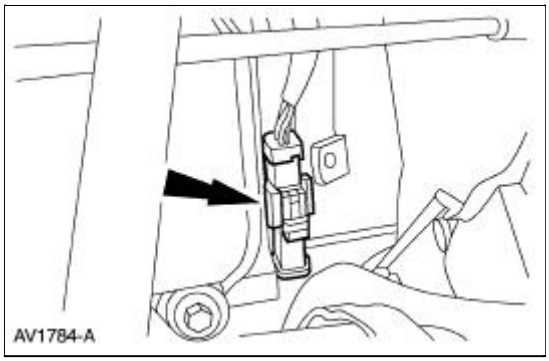
11. Disconnect the engine oil pressure sender electrical connector.



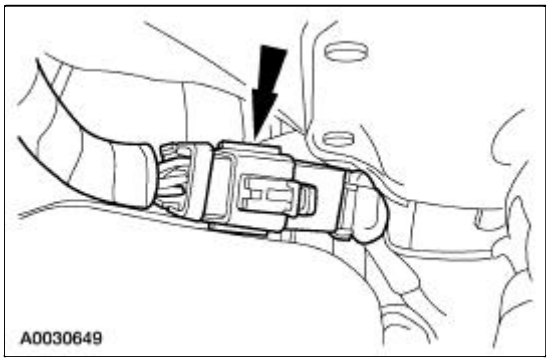
12. Disconnect the fuel pressure sensor electrical connector.



13. Disconnect the LH heated oxygen sensor (HO2S) electrical connector.



14. Disconnect the 16-pin electrical connector on the back of the left cylinder head.



15. Remove the wiring harness:
    - Separate the wiring harness from the fuel supply manifold.

16. To install, reverse the removal procedure.

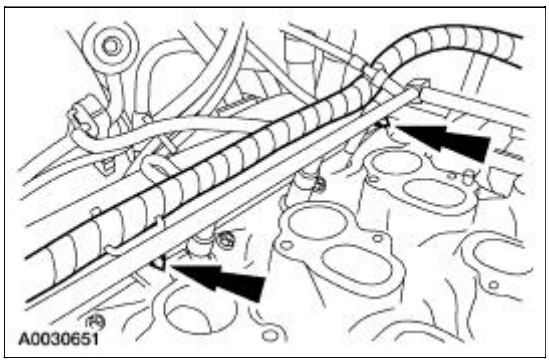
Supply Manifold

Removal and Installation

WARNING: Do not smoke or carry lighted tobacco or open flame of any type when working on or near any fuel related components. Highly flammable mixtures are always present and may ignite. Failure to follow these instructions may result in personal injury.

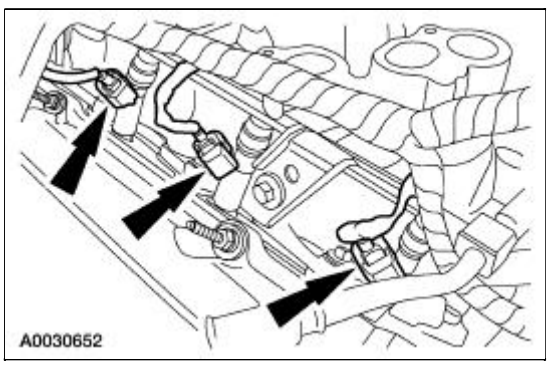
WARNING: Fuel in the fuel system remains under high pressure even when the engine is not running. Before working on or disconnecting any of the fuel lines or fuel system components, the fuel system pressure must be relieved. Failure to follow these instructions may result in personal injury.

1. Disconnect the battery ground cable.
2. Remove the upper intake manifold. For additional information, refer to Section 303-01A .
3. Relieve the fuel pressure. For additional information, refer to Section 310-00 .
4. Disconnect the fuel line. For additional information, refer to Section 310-00 .
5. Separate the wiring harness from the supply manifold.



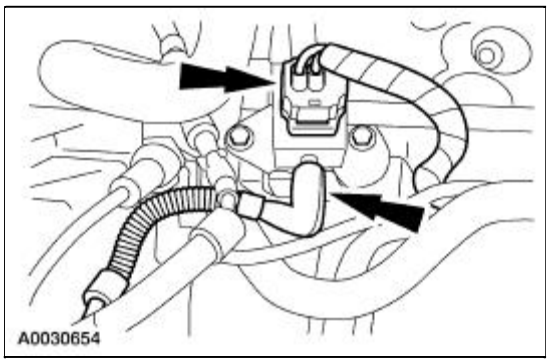
6. **NOTE:** Right side shown, left side similar.

   Disconnect the six fuel injector electrical connectors.



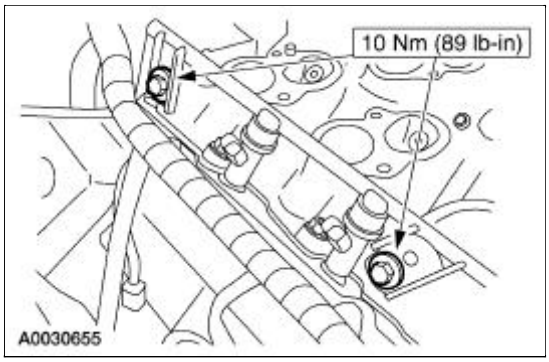
7. Disconnect the fuel pressure sensor.

- Disconnect the connector.
- Disconnect the vacuum hose.



8. **NOTE:** The right side is shown. The left side is similar.

   Remove the four supply manifold bolts and remove the fuel supply manifold with the injectors.



9. **NOTE:** When the battery (10655) is disconnect and reconnected, some abnormal drive symptoms may occur while the vehicle relearns its adaptive strategy. The vehicle may need to be driven 16 km (10 mi) or more to relearn the strategy.

   To install, reverse the removal procedure.